

ABSTRACT OF THE DISCLOSURE

Precision in an etching process is to be improved. A detecting unit 404 detects a variation of plasma emission intensity at a plurality of wavelengths (an emission band having an intensity peak in the proximity of 358 nm and an emission band having an intensity peak in the proximity of 387 nm) during a dry etching process being performed on either of a nitrogen-containing film formed on a semiconductor substrate or a non-nitrogen film provided in direct contact with the nitrogen-containing film in an etching apparatus 402. An arithmetic processing unit 406 performs calculation based on detected variation. A control unit 410 determines an endpoint of the dry etching process in consideration of the calculation result.